**Atomic Structure (Level 1) examiners tips: Read these please!**

• On the Periodic table in your resource book:

Atomic number of an atom: is the number of protons, the same as the number of electrons

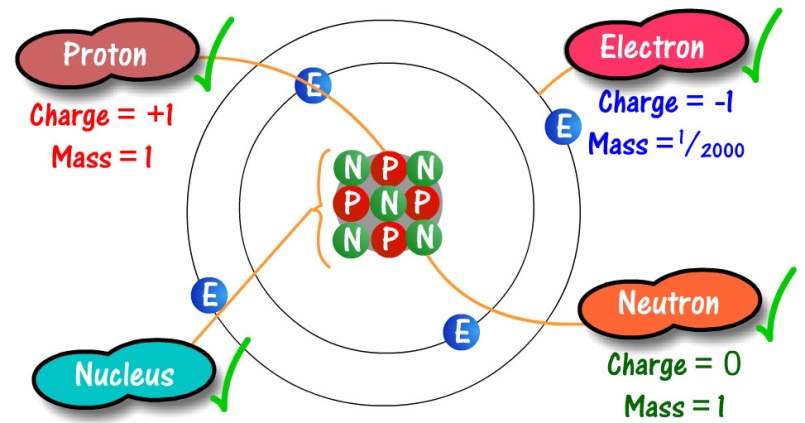
• Given to you in the question, NOT in the Periodic table in your resource book:

Mass number: the number of protons PLUS neutrons in the nucleus of an atom

•electrons are super light (1/1850 of the mass of protons and neutrons)

and

orbit the nucleus in electron shells so are NOT included in the Mass number

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• neutral atoms have the same number of protons (positive charge) and electrons (negative charge)

• when writing electron configuration remember 2 electrons in the first shell 8 in all the other shells

in Senior Chemistry you will learn that actually more than 8 electrons can fit on electron shells

• atoms in the same Group (vertical column) have the same number of valance electrons

• atoms in the same Period (horizontal rows) have the same number of electron shells

• atoms lose or gain electron(s) to form an ion which has "**STABLE full outer/valence shell**"

*eg a magnesium atom has 6 electrons in the outer shell, so would lose 2 electrons as* ***less energy is***

***required*** *for the magnesium atom to lose 2 electron than required to gain 6 electrons*

• an **Ion** is an atom that has lost or gained electrons to form a stable full outer/valence shell

*a CATion is a Positive ion (CATS Purr) and an Anion is a negative ion*

• there's no need to learn the ionic symbols - recognise them from your [Resource booklet](http://www.nzqa.govt.nz/nqfdocs/ncea-resource/exams/2014/90944-res-2014.pdf)  
• write down the number of negative electrons and number of positive protons of both atoms AND ions

• elements in the same group *eg Group 1 all form ions with the same charge 1+*

• An **Ionic compound** forms when electrons are transferred between atoms to form positive ion(s) and a

negative ion(s), there is a strong force of attraction between the oppositely charged ions, which is known

as an ionic bond.

• Ionic compounds are neutral because they have the same number of positive ions and negative ions

• when working out ionic formulae of an Ionic compound, you can use "swap and drop", however don't

refer to that in your explanation

**Also…”don’t be daft”**

use your ions table in the [RESOURCE booklet](http://www.nzqa.govt.nz/nqfdocs/ncea-resource/exams/2014/90944-res-2014.pdf), recognise the formula and know the **names** of all of the **ions**  
sulf**IDE** ion is S2- this is very, very different to the sulf**ATE** ion SO4 2-  
oxide ion is O2- this is very, very different to the **hydroxide ion OH-**

"SWAP and DROP", is meaningless, **explain clearly** how you balanced the charges of an ionic compound

a full outer shell is **STABLE** – you absolutely must state this somewhere

it is never easier to lose or gain electrons, refer to **less energy being required**

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